

Table 1

	Content ratio of water holding material (wt%)	Water absorption ratio of anode diffusion layer (wt%)	Differential pressure (mmAq)	Adhesion ratio (%)	Penetration resistance (mΩ)	Δ voltage (mV)
Example 1	10	65	90	20	3.2	12
Example 2	20	75	115	22	3.8	27.6
Example 3	5	46	62	18	2.8	25
Example 4	10	62	75	19	4.4	21
Example 5	10	62	78	21	4.8	22
Comparative Example 1	25	83	82	23	4.4	52
Comparative Example 2	10	90.8	70	21	4.6	36
Comparative Example 3	10	93.9	63	20	4.8	43
Comparative Example 4	0	35	30	18	2.6	65
Comparative Example 5	10	72	50	16	3.8	62
Comparative Example 6	10	76	125	18	4.2	37.3
Comparative Example 7	10	65	93	12	3.4	42
Comparative Example 8	10	65	88	8	4.6	58

Table 3

	Contact angle of carbon-based material (°)	Water absorption amount of carbon particles (cc/g)	Water absorption ratio of anode diffusion layer (wt%)	Differential pressure (mmAq)	Adhesion ratio (%)	Penetration resistance (mΩ)	Δ voltage (mV)
Example 9	75	360	78.5	106	20	4.2	26
Example 10	75	360	51.3	65.5	19	4.4	24
Example 11	75	360	65	78	21	4.8	24
Example 12	75	360	55	87	20	4.4	26
Comparative Example 16	100	360	85	82	23	4.4	32
Comparative Example 17	120	360	85	70	19	4.8	55
Comparative Example 18	140	360	85	65	22	4.6	65
Comparative Example 19	75	130	62	70	21	4.6	32
Comparative Example 20	75	80	47	62	20	4.8	65
Comparative Example 21	75	360	98	103	18	4.4	36
Comparative Example 22	75	360	35	62	21	4.2	42
Comparative Example 23	75	360	82	130	19	4.0	32
Comparative Example 24	75	360	78	45	20	3.8	48
Comparative Example 25	75	360	65	93	12	4.5	35.8
Comparative Example 26	75	360	65	88	8	4.6	58

Table 4

	Water absorption amount of carbon particles (cc/g)		Water absorption ratio of anode diffusion layer (wt%)	Differential pressure (mmAq)		Adhesion ratio (%)	Penetration resistance (mΩ)		Δ voltage (mV)
	Anode	Cathode		Anode	Cathode		Anode	Cathode	
Example 13	360	130	65	85	83	20	2.2	3.2	28
Example 14	360	80	65	85	83	21	2.2	2.8	24
Example 15	360	130	82.4	62	62	19	1.8	2.6	28
Example 16	360	130	50.4	100	105	20	2.6	3.4	25
Comparative Example 27	360	360	82.4	85	83	21	2.2	3.2	44.7
Comparative Example 28	360	520	82.4	85	83	22	2.2	2.4	55
Comparative Example 29	130	130	37.6	83	83	20	2.6	3.2	32.3
Comparative Example 30	80	130	20	83	83	19	2.8	3.2	65
Comparative Example 31	360	130	32.2	128	83	19	3.6	3.2	32
Comparative Example 32	360	130	95	42	83	21	1.8	3.2	58
Comparative Example 33	360	130	82.4	85	132	20	2.2	4.8	33.4
Comparative Example 34	360	130	82.4	85	45	20	2.2	2.6	62
Comparative Example 35	360	130	82.4	85	83	12.5	2.2	3.2	34
Comparative Example 36	360	130	82.4	85	83	7.3	2.2	3.2	58

Table 5

	Water absorption amount of carbon particles (cc/g)		Water absorption ratio of anode diffusion layer (wt%)	Differential pressure (mmAq)		Adhesion ratio (%)	Penetration resistance (mΩ)		Δ voltage (mV)
	Anode	Cathode		Anode	Cathode		Anode	Cathode	
Example 1	75	140	65	85	83	20	2.2	3.2	28
Sample 1	100	140	82.4	85	83	20	2.2	3.2	36
Sample 2	130	140	82.4	85	83	19	2.2	3.2	58
Sample 3	75	100	82.4	85	83	19	2.2	3.2	36.3
Sample 4	75	75	82.4	85	83	21	2.2	3.2	54